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Health Problems of Industrial Workers

By JOHN A. LAPP

HEALTH problems in industry have been freely discussed during the war period and some preliminary standards have been defined and partially applied. Beginnings have been made which promised much for the solution of some vexed labor questions. How much good will finally result now depends upon the way the temporary experiences are moulded together into a permanent labor policy.

Health problems were forced upon the attention of the country by the national exigency. Immediate war needs required maximum production on the part of every industrial agency. It soon became evident that this level of production could not be reached or maintained except by the physical fitness of every unit. For the first time in generations man power was valued at its full worth. The old system under which men disabled by sickness or accident were scrapped and new men took their places, rapidly broke down. A "new industrial day" came for the worker. He was raised to the level of the machine on which he worked. Clear-headed people saw that the provision for care must be extended to keep the worker fit, just as care had always been extended to keep the plant machinery in the best running order and the dumb beasts well fed and efficient.

Herbert Spencer said more than a half century ago:

Not only is it the event of a war often turns on the strength and hardiness of the soldiers, but it is that the contests of commerce are in part determined by the bodily endurance of producers. Already, under the keen competition of modern life, the application required of almost everyone is such as few can bear without more or less injury. Already, thousands break down under the high pressure they are subject to. If this pressure continues to increase, as it seems likely to do, it will try severely all but the soundest constitutions.

Dr. Victor Vaughan said more recently:

That government is the best which secures for its citizens the greatest freedom from disease, the highest degree of health and the longest life, and that people which most fully secure the enjoyment of these blessings will dominate the world.¹

Prof. Thomas Nixon Carver expressed more exactly the national significance of working power:

¹ *Commemoration Volume*, A. M. A., 1915, p. 3.

The most valuable resource of any country is its fund of human energy, that is, the working power, both mental and physical, of its people. It is safe to say that any capable race of men who will conserve, economize and utilize that fund will be able not only to extract a living but actually to prosper in the midst of poor natural surroundings. On the other hand, if they fail to economize their fund of energy, if they waste and dissipate it, they will certainly decay in the midst of the richest geographical and material resources.

With the return of peace and the demobilization of labor, there is danger that we may revert to the old standards and begin again our progress along the weary road toward industrial health. There are some clearly marked milestones, however, which will stand as guides.

FATIGUE AND THE EIGHT-HOUR DAY

The English experience carefully sifted and preserved in parliamentary reports and in laws and rules, shows clearly that the eight-hour day is a health measure which pays. The idea had long been maintained but it is now moulded into fact in the crucible of war. A nation needing maximum production for the life and death struggle in which it was engaged, found that the best results were obtained by shortening the hours of labor. America followed suit and during the brief time in which industry was keyed up to the maximum pitch, the eight-hour day was rapidly applied, voluntarily by employers and involuntarily under orders of the War Labor Board.

Fatigue, the cumulative result of excessive labor, is a health hazard of the first magnitude. Speaking of the physical fitness of the worker, Dr. Frederick S. Lee said:

From the standpoint of industrial physiology the industrial worker is looked upon as bringing to the general physical equipment of the factory his own bodily machine, the most intricate of all the machines used in the plant. This machine must be understood, it must be constantly watched, it must be used intelligently, and it must not be abused. Like other industrial machines it can be worked at different speeds, but unlike other industrial machines it cannot be worked for an indefinite period, because it is subject to the limitation of fatigue. Fatigue delays work, diminishes output, spoils goods, causes accidents and sickness, keeps workers at home, and in all these ways is an obstacle to efficiency. How fatigue can be kept down to its lowest reasonable limit, how the working power of the individual can be maintained from day to day and from week to week and be made to yield a maximum output without detriment to itself and to others—in other words, how the human machine can be used so as to obtain from it the most profit—constitutes one of the great industrial problems of the day.²

² *U. S. Public Health Reports*, Vol. 33, No. 2, January 11, 1918, p. 30.

HOUSING AND HEALTH

Standards of health in industry cannot be effective unless decent living quarters are provided. Any benefit accruing from carefully equipped shops may be entirely dissipated by the workers' unwholesome environment in leisure hours. The causes of disease are distributed between the individual, the industry, and the community and home environment. An exhaustive investigation by the U. S. Public Health Service in Cincinnati in 1916 showed this clearly in the case of tuberculosis. Among 442 persons suffering from tuberculosis, industry was charged with 18.1 per cent; poverty and housing 9.7 per cent; personal vice with 10.8 per cent; heredity with 32.4 per cent; other diseases with 8.4 per cent and indeterminate with 20.6 per cent. All investigation and experience tend to show a constant relationship between mortality, morbidity, and living conditions.

The remedy must be coöperative and social. Private enterprise cannot solve the problem of furnishing suitable places to live at a price the worker can pay. Insanitary housing must be prohibited. So long as hovels are allowed to stand, people will be found to exist in them. Nor can the worker expect to own the place in which he lives. It is impossible for him to do so in most cities. It is inadvisable for him to do so unless the conscienceless profiteering which takes toll of a third to a half of the value is stopped. The building by public enterprise or public welfare corporations for rent or for sale at a legitimate price, the enlargement of transportation systems, and the prohibition of places unfit for human habitation are essential to buttress the health standards which are being established. The marvelous experiment from a health standpoint in housing negro families made through the efforts of Mr. J. G. Schnidlapp, in Cincinnati, leaves little doubt about the possibilities of broad social action.

WORKING CONDITIONS

There are several major hazards to the worker's health. Chief among these are dust, poisons, devitalized air, heat, humidity, exposure.

Four million men are working in places subject to serious dust hazard (Hoffman, *Mortality from Consumption in Dusty Trades*,

Bulletin U. S. Bureau of Labor Statistics, No. 231); many poisons menace the health if not the very existence of the employes. Fully half the work places are not properly ventilated. Large numbers of men are subjected to the hazard of excessive heat. An unknown number are subjected to exposure to weather and other conditions inimical to health.

Death rates vary enormously in different occupations and sickness statistics are eloquent in their proof that it is excessively dangerous to work in certain industries. The rate of sickness and death from various causes in different trades proves that work in some occupations increases the chance of death from certain diseases. Men who are predisposed to particular diseases have only a slight chance of escape when engaged in work where the cause of such disease is present. Dr. E. R. Hayhurst states this at some length in his report on occupational diseases in Ohio.

The second most important feature in the relationship between work and disease is the problem of the worker himself. Some workers are very much more susceptible to the health hazards mentioned above than others, so much so that as hygienic as certain industries and processes can possibly be made, still there are certain classes of persons who should not engage in them. This is exemplified today, in many instances as a matter of natural selection; for instance, the more delicate and sickly disposed persons do not follow the more fatiguing or heat-exposing trades. Unfortunately this does not apply so closely to older workers who have been following the more hazardous undertakings for years, and who, having become weakened from various causes, still endeavor to remain at their chosen avocations, irrespective of the damaging effects upon the body. Much of this question of the human factor will be solved in the future by a selection of employes through physical examinations for occupations to which they are best fitted. As an economical principle this must be done for the benefit of employer, employe and society. Having picked the proper physically or mentally capable person for the position at hand, it is further necessary to eradicate health hazards, as far as possible, if we expect to put a check upon unnecessary disease and a check upon the shortened span of life which exists among occupied persons today.

CONSERVING MAN POWER

This is perhaps the most important result of activities relating to health brought about by the war. Here standards can be most readily set up and enforced.

For generations we have been mining our human resources just as we have been mining our mineral resources, in a wasteful fashion. Men went into industry utterly regardless of particular hazards involved or of their ability to withstand them. Accidents destroyed some men and lessened the working power of others. Sickness, partly or entirely an attendant of industry,

took its toll of disabled men. Those who were broken went out to the scrap heap. All the while a new fresh stream came in at the top. The supply of labor seemed to the exploiters sufficient to enable this process to go on indefinitely.

Meager attempts were made some years ago to arrest the more serious consequences. Safety laws were passed eliminating some of the worst hazards of accidents. These laws though indifferently enforced did great good. Then came the conviction that men should be compensated for their losses from accidents in industry. Workmen's compensation laws were passed. Today thirty-eight states have such laws, providing for payment of 50 per cent to 66 $\frac{2}{3}$ per cent of lost wages and some provide for reasonably adequate medical care. In the meantime the burden of loss was shifted largely to industry and caused the initiation of "safety first" campaigns.

These safety efforts have been directed principally to the prevention of accidents. They have taken only incidental account of diseases. Yet disease is responsible for much more disablement than accidents. Many more men go to the scrap heap from disease than from accident. We shall undoubtedly see this fact properly emphasized especially if the burden of sickness is distributed upon employes, employers, and the public by means of social insurance.

The war has emphasized particularly the conservation and rehabilitation of men. We see quite clearly now, that compensation in cash for injuries does not do justice to any of the three factors—the man, the industry, or society. What all three desire is continued working power on the part of every unit. There are three losses sustained by the man who is disabled by sickness or accident;—Wages, cost of medical care, loss of working power.

We have come to see that each of these losses is a loss to industry and to society as well. The immediate problems are those of prevention and salvage. Preventive measures consist in making the work places safe and sanitary; guarding the machines against every possible danger; providing physical examinations to select and properly guide the men in their work; limiting hours of labor to the efficient productive capacity of the men; eliminating poisons, heat, dust and other hazards; and lastly, provid-

ing a plan of medical supervision and first aid facilities to reduce to the vanishing point the danger of infections.

Measures of rehabilitation constitute the restoration, as far as possible, of working power to disabled men. This consists in establishing the physical man, removing his handicaps, and replacing his vocational power by reëducation along some line of work in which he can profitably engage.

We know how to do these things now through the accumulated experience of the warring countries in restoring their soldiers to such measure of physical and vocational fitness as the circumstances of each case permitted. We would be fatuous to an extreme if we do not apply the standards of health and human salvage so firmly fixed.

HAZARDS OF WOMEN'S WORK

Regarding the health of women in industry, much has been said and some definite investigations have been made. The influx of women into occupations to which they were unaccustomed caused great concern lest the hazards of their employment be too great. Scientific inquiries have been undertaken on certain questions about which there has been much conjecture, such as:

1. What are the relative effects of the industrial poisons upon men and women? Some poisons such as lead and mercury have already been shown to be more injurious to women than to men.
2. What is the peculiar effect of bad posture upon women?
3. What are the effects of fatigue upon women not found in the case of men?
4. Do the hazards of heat, dust, humidity, devitalized air, and weather exposure react particularly upon women workers?

Many of these questions have heretofore been considered primarily in relation to the child-bearing functions. However, this point of view must be extended to facilitate the discussion of other factors whose importance arises from individual and industrial effects rather than racial effects; but which relatively are of great importance in dealing with the situation.

CHILD IN INDUSTRY

There is very little difference of opinion today regarding the necessity for the limitation of child labor and for its actual pro-

hibition in certain industries. The next step is now becoming clear. Children must be guided into suitable employments in industry and retained under careful supervision until they are properly adjusted. Morbidity statistics show that sickness is much more prevalent among persons under eighteen in industry than among the employed persons of more advanced ages, thereby indicating the importance of physical strain as a factor in the employment of youthful workers. Vocational guidance is destined to include physical as well as occupational adjustment. Youth entering upon industry should be physically examined and not allowed to enter occupations which will be detrimental to health and physical development. Such supervision ought to extend at least to the eighteenth year.

CONCLUSION

The program for health standards here outlined involves some reorganization and much new organization. Additional burdens are placed upon employers, employes, and the public. Some unsolved problems have been projected into the arena for social action. However, it frankly recognizes the dawn of a new industrial day, when society, acting for all, must deal intelligently and comprehensively with the human problem. That problem in the main consists of reducing the hazards of life to a minimum, increasing the productive capacity of the individual, restoring men to working power and stabilizing society itself.